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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PHAN, TRONG Q	

ART UNIT	PAPER NUMBER
2827	

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/716,749	KIM ET AL.	
	Examiner	Art Unit	
	TRONG PHAN	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) *2,4,12,21-24 and 27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-11,13-20,25,26 and 28-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 5-6, 9-14, 16-19, 21, 23 and 25-30 are, insofar as understood, rejected under 35 U.S.C. 102(e) as being anticipated by Snyder et al., 6,829,190.

Snyder et al., 6,829,190, discloses in Fig. 2 a memory system comprising:

Regarding claims 25-26, 28-29, 1, 5, 9, 11, 14, 16 and 18-19:

external computing system 210 which is read on the peripheral circuitry;

memory device 270 which is read on a plurality of memory cells;

mode register (see lines 27-32, column 5);

temperature sensor 230 which is read on the means for supplying temperature information;

voltage pump 240 and voltage column 285 which are read on the voltage generator;

wherein: voltage pump 240 may be a programmable voltage pump that can produce a range of programming voltages to memory device 270 (see lines 13-20, column 7) as a function of temperature and time (see lines 37-39, column 6 and lines 16-18, column 8), thus, it inherently produces a boosted voltage Vpp pump (see line 17, column 11) to the

world lines of memory device 270 as well known in the art;

as shown in Fig. 5C, as the temperature increases from -40 to 100, the program pulse width decreases from about 17 to 7;

as shown in Fig. 5D, as the program pulse width decreases from 10 to 0, the program margin voltage VMP increases from about 1.2 to about 3; therefore, Figs. 5C and 5D also inherently illustrate that as the temperature decreases, the programming voltage to the memory device increases;

Regarding claim 10:

as shown in Fig. 1, memory cell 100 including P-WELL 120, therefore, a negative programming voltage with respect to a ground reference inherently including in a range of programming voltages as well known in the art.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 5-6 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al., 6,829,190, in view of Applicant's Fig. 1 Prior Art.

Snyder et al., 6,829,190, discloses everything except the features as recited in claims 30 and 5-6.

Applicant's Fig. 1 Prior Art discloses a conventional Vpp voltage generator 100 including a charge pump 102, voltage detector 104 comprising voltage divider resistors

R1/R2 and reference voltage circuit 106 comprising voltage divider resistors R3/R4.

It would have been obvious under 35 USC 103(a) to one of ordinary skill in the art to utilize the conventional Vpp voltage generator 100 in Applicant's Fig. 1 Prior Art for the voltage pump 240 in Fig. 2 of Snyder et al., 6,829,190, for the purpose of providing a same voltage level over a wide operating temperature range (see lines 1-2 of paragraph [0008], page 3 of the specification of Snyder et al., 6,829,190).

5. Claims 7-8 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Snyder et al., 6,829,190, in view of Applicant's Fig.1 Prior Art and further in view of Park et al., 6,958,947.

Snyder et al., 6,829,190, which is modified by Applicant's Fig. 1 Prior Art, discloses everything except the features as recited in claims 7-8 and 20.

Regarding claims 7-8:

Park et al., 6,958,947, discloses in Fig. 4 the teaching of using switches SW1 to SW4 for shunting the respective resistors RU2, RU3, RD2 and RD3 in the voltage divider circuit to provide the Vdiv in response to the respective control signal $\overline{UP1}$, $\overline{UP2}$, $\overline{DN1}$ and $\overline{DN2}$.

It would have been obvious under 35 USC 103(a) to one of ordinary skill in the art to modify Snyder et al., 6,829,190, which is modified by Applicant's Fig. 1 Prior Art, by Fig.4 of Park et al., 6,958,947, for the purpose of providing the detected voltage Vpp or the reference voltage in response to the control signals.

Regarding claim 20:

adding a diode voltage into a prior art invention would not have been a significantly

patentable feature, therefore, claim 20 would be rendered obvious under 35 USC 103(a) as being unpatentable over Snyder et al., 6,829,190, in view of Applicant's Fig.1 Prior Art and further in view of Park et al., 6,958,947, as set forth above.

Double Patenting

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 3, 5-11, 13-20, 25-26 and 28-30 are, insofar as understood, rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-28 of U.S. Patent No. 7,009,904. Although the conflicting claims are not identical, they are not patentably distinct from each other because: the voltage generator as recited in claims 1, 3, 5-11, 13-20, 25-26 and 28-30 of the present invention is obviously the same as the voltage generator as recited in claims 1-28 of

U.S. Patent No. 7,009,904, since they are both drawn to the embodiments as shown in the same Figs. 2-3 and 4A-B in the present invention and in U.S. Patent No. 7,009,904.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

9. Applicant's arguments filed on 6/30/06 have been fully considered.

All objections to the drawings of the present invention and all the rejections under 35 USC 112, second paragraph, have been withdrawn in view of Applicant's amendments.

The double patenting rejection has been considered to be proper regardless of the same filing date on November 19, 2003 because the basic doctrine of nonstatutory

obviousness-type double patenting never set forth any conflicting time frame for the filing date between conflicting application and the patent. Therefore, the double patenting rejection has been repeated and made FINAL.

Also, in view of reconsideration and the newly discovered prior art of Park et al., 6,958,947, new grounds of rejections have been set forth as above.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRONG PHAN whose telephone number is (571) 272-1794. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, AMIR ZARABIAN can be reached on (571)272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TRONG PHAN
PRIMARY EXAMINER